

**Apparatus, Mechanism and Process  
for Warming-Up Fuel Cell**

BACKGROUND OF THE INVENTION

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Field of the Invention

The present invention relates to an apparatus, a mechanism,  
and a process for warming-up a fuel cell in order to start a  
cold fuel cell. More particularly, the invention concerns an  
10 apparatus, a mechanism, and a process for warming-up a fuel cell  
utilizing a hydrogen-occlusion alloy to start a fuel cell under  
a condition of low temperature.

Description of Related Arts

15 In recent years, fuel cell electric vehicles (hereinafter  
abbreviated as "FCEV") have drawn attraction from ecological  
viewpoints, due to the understanding that the amount of carbon  
dioxide exhausted, which leads to global warming, should be  
suppressed. A FCEV carries a fuel cell (hereinafter  
20 abbreviated as "FC"), which generates power due to  
electrochemical reaction between hydrogen (H<sub>2</sub>) and oxygen (O<sub>2</sub>)  
in air, and supplies the power generated from FC to a driving  
motor at which driving force is brought about.

A FC exhibits its performances at the fullest extent at  
25 a given temperature. For example, in the case of a proton  
exchange membrane (PEM) type FC, the temperature for which FC